



AIAI

Tight buffered fiber optic cable with strong glass yarn shield

Non metallic, waterproof

Up to 24 fibers

SHF1

DNV

Application

This product is absolutely immune against electromagnetic or electrical disturbances in its environment. It is also mechanically strong and waterproof. It is ideal for communication and data transmission in harsh environments as shipboard- and offshore installations close to electrical machinery and power lines. The cable can also be delivered with SHF2 MUD-resistant outer jacket, AIAU.



Construction Fiber

Fibertype	Tight buffer 0,9 mm
Colorcode fiber	1 - Blue 9 - Yellow 2 - Orange 10 - Violet 3 - Green 11 - Pink 4 - Brown 12 - Turquoise 5 - Grey 13 - Blue with black ring 6 - White 14 - Orange with black ring 7 - Red 15 - Green with black ring 8 - Black 16- Brown with black ring 17 - Grey with black ring 18 - White with black ring 19 - Red with black ring 20 - Yellow with black ring 21 - Violet with black ring 22 - Pink with black ring 23 - Turquoise with black ring 24 - White with double black ring
Moisture barrier	Glass yarn
Inner jacket	SHF1
Armour	Aramid yarn
Jacket	Black SHF1, UV-resistant. Also available with SHF2 MUD, other colours on request
Diameter	See table
Weight	See table

Specifications

Attenuation	See separate table for fibres
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Specifications fiber

Fiber type	Tight buffer 0,9 mm
Temperature range	-40 – 70 [°C] SHF1 -40 – 90 [°C] SHF2 MUD
Tensile strength	2000 [N] Δα reversible (IEC 60794-1-2-E1)
Crush resistance	2000 [N/100mm] (IEC 60794-1-2-E3)
Impact resistance	20 [J] Δα reversible (IEC 60794-1-2-E4)
Water penetration	No water penetration (IEC 60794-1-2-F5)
Bending radius flexible	15 [x outer diam.]
Bending radius installed	10 [x outer diam.]

Norms

Halogenfree, max content corrosive and toxic gases	IEC 60754-1 & IEC 60754-2
Material properties, insulation and sheath	IEC 60092-360 (359)
Flame resistance	IEC 60332-3-22
Flame retardant	IEC 60332-1
Smoke emission	IEC 61034-1 & IEC 61034-2
UV-resistant	ASTM G 154
Certification	DNV



ABS certificated can be prodced if required.



Fiber data

Properties	MM 62.5 OM1	MM 50 OM2	MM 50 OM3	MM 50 OM4
Core Diameter	62.5 ± 2.5 µm	50 ± 2.5 µm	50 ± 2.5 µm	50 ± 2.5 µm
Core non-circularity	< 5%	< 5%	< 5%	< 5%
Cladding diameter	125 ± 1.0 µm	125 ± 1.0 µm	125 ± 1.0 µm	125 ± 1.0 µm
Coating diameter	242 ± 5 µm	242 ± 5 µm	242 ± 5 µm	242 ± 5 µm
Cladding non-circularity	<0.7%	<0.7%	<0.7%	<0.7%
Core/Cladding concentricity error	<1 µm	<1 µm	<1 µm	<1 µm
Coating/cladding concentricity error	<10 µm	<6 µm	<6 µm	<6 µm
Numerical Aperture	0.275 ± 0.015 µm	0.200 ± 0.015 µm	0.200 ± 0.015 µm	0.200 ± 0.015 µm
Attenuation @ 850 nm	<3.50 db/km	<2.89 dB/km	<2.89 dB/km	<2.89 dB/km
Attenuation @1300 nm	<1.00 dB/km	<0.80 dB/km	<0.80 dB/km	<0.80 dB/km
Bandwidth @ 850 nm	>200 MHz*km	>500 MHz*km	>1500 MHz*km	>3500 MHz*km
Bandwidth @ 1300 nm	>500 MHz*km	>500 MHz*km	>500 MHz*km	>500 MHz*km
Effective Modal Bandwidth (EMB)@ 850 nm	-	-	>2000 MHz*km	>4700 MHz*km
Fibre capacity 10GBase-SR	33 m	83 m	300 m	550 m
Fibre capacity 10GBase-LX4	274 m	600 m	1000 m	1100 m
Fibre cap. 40GBase-SR4/100Base-RS10	-	-	140 m	170 m
Proof test	>100kpsi	>100kpsi	>100kpsi	>100kpsi



Properties	SMR ITU-T G652D	SMR ITU-T G657A	SMR ITU-T G657B / - B2	SMR NZD ITU-T G655.E
Mode field Diameter @ 1310 nm	9,0±0,4 μm	9,0±0,4 μm	9,0±0,4 μm	-
Mode field Diameter @ 1550 nm	10,1±0,5μm	10,1±0,5μm	9,9±0,5μm	9,2±0,5μm
Cladding diameter	125±0,7μm	125±0,7μm	125±0,7μm	125±1,0μm
Coating diameter	242±7 μm	242±7 μm	242±7 μm	242±7 μm
Cladding non-circularity	≤ 0,7 %	≤ 0,7 %	≤ 0,7 %	≤ 0,7 %
Core/Cladding concentricity error	≤ 0,5 μm	≤ 0,5 μm	≤ 0,5 μm	≤ 0,5 μm
Coating/cladding concentricity error	≤ 12 μm	≤ 12 μm	≤ 12 μm	≤ 12 μm
Cable Cut off wavelength	≤ 1260 nm	≤ 1260 nm	≤ 1260 nm	≤ 1300 nm
Zero dispersion wavelength (λ ₀)	1300-1322 μm	1300-1322 μm	1300-1324 μm	1440 μm
Dispersion slope (S ₀) @ (λ ₀)	≤ 0,090 ps/(nm ² * km)	≤ 0,090 ps/(nm ² * km)	≤ 0,092 ps/(nm ² * km)	-
Chromatic dispersion @ 1285-1330 nm	≤ 3,5 ps/(nm * km)	≤ 3,5 ps/(nm * km)	-	-
Chromatic dispersion @ 1550 nm	≤ 18 ps/(nm * km)	≤ 18 ps/(nm * km)	-	-
Chromatic dispersion @ 1625 nm	≤ 22 ps/(nm * km)	≤ 22 ps/(nm * km)	-	-
Chromatic dispersion @ 1530-1565 nm	-	-	-	5,5 - 10 ps/(nm * km)
Chromatic dispersion @ 1565-1625 nm	-	-	-	5,5 - 10 ps/(nm * km)
PMD @ 1550 nm	≤ 0,1 ps/√ km	≤ 0,1 ps/√ km	≤ 0,1 ps/√ km	≤ 0,2 ps/√ km
Attenuation @ 1310 nm	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,40 dB/km
Attenuation @ 1383nm	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,35 dB/km	≤ 0,40 dB/km
Attenuation @ 1550 nm	≤ 0,25 dB/km	≤ 0,25 dB/km	≤ 0,25 dB/km	≤ 0,25 dB/km
Attenuation @ 1625 nm	≤ 0,28 dB/km	≤ 0,28 dB/km	≤ 0,28 dB/km	≤ 0,28 dB/km
Attenuation with bending:				
Mandreal Radius 15mm @1550 10 turns	-	≤ 0,25 dB	≤ 0,03 dB	-
Mandreal Radius 15mm @1625 10 turns	-	≤ 1,0 dB	≤ 1,0 dB	-
Mandreal Radius 10mm @1550 1 turn	-	≤ 0,75 dB	≤ 0,1 dB	-
Mandreal Radius 10mm @1625 1 turn	-	≤ 1,5 dB	≤ 0,2 dB	-
Mandreal Radius 7,5mm @1550 1 turn	-	-	≤ 0,5 dB	-
Mandreal Radius 7,5mm @1625 1 turn	-	-	≤ 1,0 dB	-
Proof test	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi	≥ 100 kpsi



No. of fibre	Diam. inner sheath [mm]	Diam. outer sheath [mm]	Weight [kg/km]
4	5,2	8,5	90
8	6,0	9,4	100
12	6,7	10,3	115
24	8,5	12,1	160

Updated

Date	Rev.	Description
10.04.2019	1	Properties